ABSTRACT OF THE DISCLOSURE

By adding a novel improvement to the technique disclosed in JP 8-78329 A, a manufacturing method in which film characteristics of a semiconductor film having a crystalline structure are improved is provided. In addition, a TFT having superior TFT characteristics, such as field effect mobility, which uses the semiconductor film as an active layer, and a method of manufacturing the TFT, are also provided. A metallic element which promotes the crystallization of silicon is added to a semiconductor film having an amorphous structure and an oxygen concentration within the film of less than $5x10^{18}$ /cm^3. The semiconductor film having an amorphous structure is then heat-treated, forming a semiconductor film having a crystalline structure. Subsequently, an oxide film on the surface is removed. Oxygen is introduced to the semiconductor film having a crystalline structure, and processing is performed such that the concentration of oxygen within the film is from $5x10^{18}$ /cm^3 to $1x10^{21}$ /cm^3. After removing an oxide film on the surface of the semiconductor film, the semiconductor film surface is leveled by irradiating laser light under an inert gas atmosphere or in a vacuum.